

**IMPLEMENTING THE INCIDENT MANAGEMENT SYSTEM  
STANDARD OPERATING PROCEDURES**

Executive Analysis of Fire Service Operations  
In Emergency Management

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An applied research project submitted to the National Fire Academy as part of the  
Executive Fire Officer Program  
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*Appendix H Not Included. Please visit the Learning Resource Center on the Web at <http://www.lrc.dhs.gov/> to learn how to obtain this report in its entirety through Interlibrary Loan.*

## **ABSTRACT**

The Vestavia Hills Fire Department did not have a standardized written procedure for an incident management system. The purpose of this research project was to develop a standard operating procedure for an incident management system and implement it in the Vestavia Hills Fire Department. The author also explored the status and capability of neighboring "Mutual Aid" departments to implement the incident management system. The research questions were as follows:

1. What regulations and national consensus standards exist concerning incident management systems?
2. What elements are needed for an effective Incident Management SOP?
3. What type of equipment is needed by an incident commander?
4. What is the status of other area fire departments to implement an incident management system?

These research questions were answered using the action and evaluative methods. The action research method was utilized to develop an incident management standard operating procedure and incident commander equipment list for the Vestavia Hills Fire Department. The evaluative research method was used in determining, through a response survey, the status of area fire departments to implement IMS. The need for fire departments to operate safely and more effectively by adhering to relevant OSHA and EPA regulations, consulting the NFPA standards of recommended practices, and developing and implementing standard operating procedures was indicated by this project.

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## INTRODUCTION

The Vestavia Hills, Alabama Fire Department serves a population of approximately 40,000 in an urban setting consisting of approximately 19 square miles. The department has an ISO Class 3 rating and is staffed by 66 line personnel, five administrative positions, and 12 fire alarm dispatchers. Emergency operations are conducted on a three-platoon rotation from four fire stations. The department provides a wide variety of important services to its citizens. These services include fire prevention, public education, fire suppression, hazardous materials mitigation, confined space/high angle rescue, and emergency medical services, including transportation of the sick and injured. The majority of the fire suppression services provided require confinement and extinguishment of residential structure fires.

The Vestavia Hills Fire Department (VHFD) executes all of its emergency response operations, including structure fires, by providing proper personal equipment, developing on-scene mitigation strategies, and using standard operating procedures (SOP). However, the department has not had a standard operating procedure for an Incident Command System (ICS).

In recent years, SOPs for ICS operations have come to be regarded as critical for firefighter safety and the effective use of important resources. Commanding the Initial Response, instructor manual (1987) states in regard to the use of Incident Command, "Case after case proves that when incident command is weak, firefighters get hurt or killed. Fire agencies without effective incident command can usually be identified on the incident because lack of tactical coordination results in resources being improperly placed and used.

The incident command system is a standard operating procedure for chief officers. The incident command system (ICS), now called the incident management system (IMS), has

identified and given names to important components of a fire and emergency command team.

The IMS is a written standard on how to command and control fires and emergencies. The IMS provides accountability and control to fireground management and it reduces free-lancing by chief and company officers (Dunn, 2001).

On August 9, 2001, implementing the ICS/IMS was formally discussed at a staff meeting of the operational division of VHFD. All of the administrative staff, along with the five-battalion chiefs attending the meeting, unanimously agreed that the department needed an SOP for IMS operations. The purpose of this Executive Fire Officer research project was to develop the standard operating procedure to be followed by VHFD personnel when using the incident management system.

The action and evaluative research methods were used to ascertain the pertinent information for this project. A comprehensive literature review was conducted. The literature review included numerous periodicals, textbooks, course manuals, and newsprint articles. A response survey was used to determine how many other mutual aid fire departments used IMS and evaluate its effectiveness.

The research process attempted to answer the following research questions:

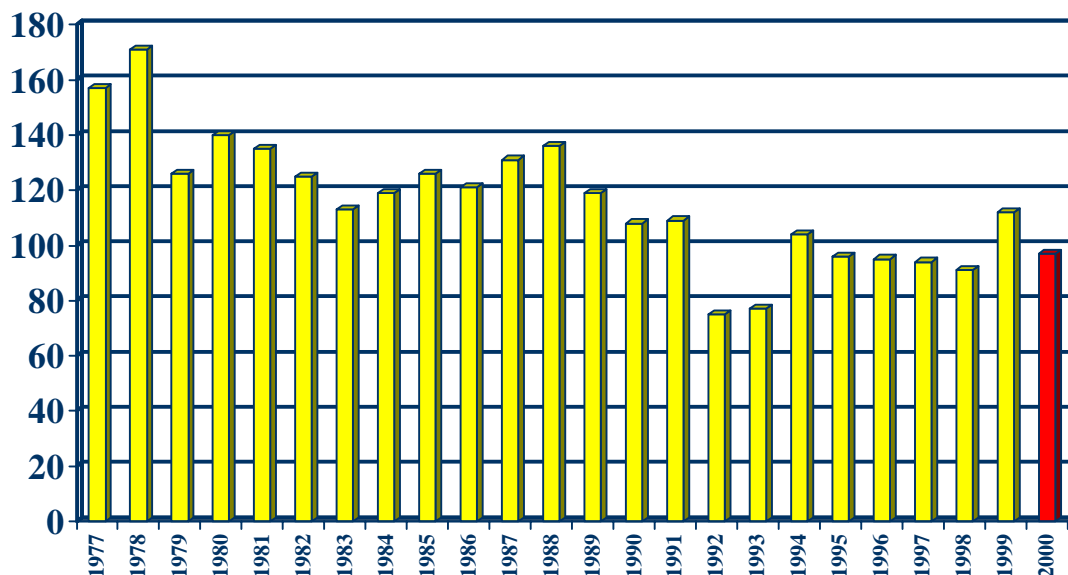
1. What regulations and national consensus standards exist concerning incident management systems?
2. What elements are needed for an effective Incident Management SOP?
3. What type of equipment is needed by an incident commander?
4. What is the status of other area fire departments to implement an incident management system?

## BACKGROUND AND SIGNIFICANCE

If you look at the NIOSH (National Institute for Occupational Safety and Health) reports (about the investigations of firefighter line-of-duty deaths), the number one cause of firefighter fatalities is a lack of incident command (Brunacini, 2001). Last year, 102 firefighters were killed in the line of duty. According to the National Fire Protection Association's Annual Report (Fahy and Leblance 2001), for the past twenty years there has been an average of 100 firefighters killed in the line of duty per year (see Figure 1). The largest proportion of these deaths, 38 percent, occurred on the fireground (see Figure 2). Figure 3 shows the distribution of the 39 fireground deaths by fixed property use. The largest proportion of deaths, 46 percent, occurred in residential structures.

**Figure 1**

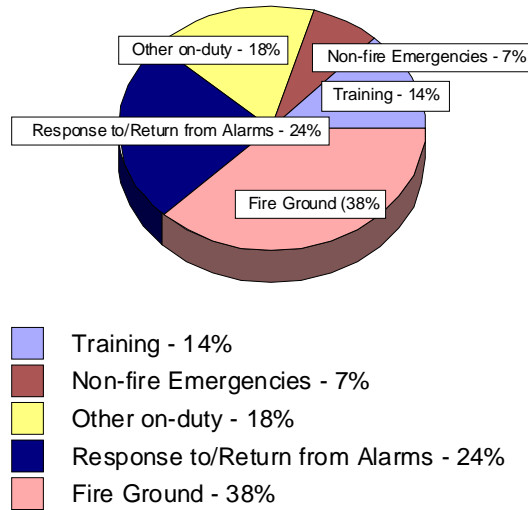
**Fire Fighter Fatalities**



Source NFPA

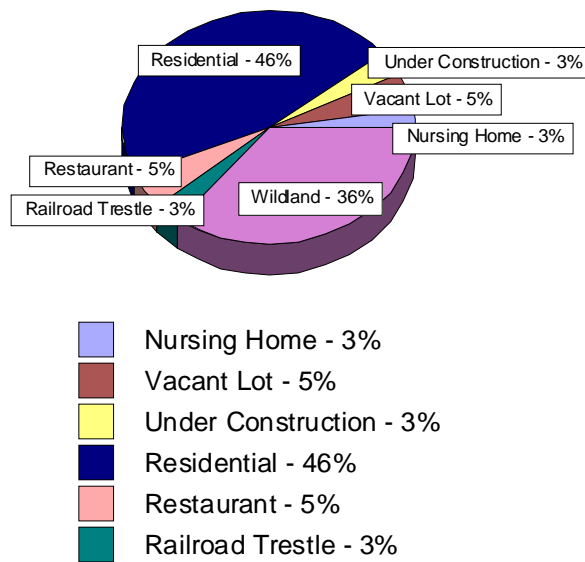


**Figure 2**  
**Firefighter Deaths by Type of Duty 2000**



Source: NFPA

**Figure 3**  
**Firefighter Deaths by Fixed Property Use 2000**



Source: NFPA

### **Historical Perspectives**

A chemical spill - "It's not going to happen here... " A tornado - "We'll have plenty of warning... " A plane crash - " You can't prepare for something like that... " Mass casualty incident - "I know we're not prepared, but... " These remarks typify many response organization's attitudes about disaster planning and incident management. As a result of such attitudes, many emergency response agencies do not adequately prepare for the unexpected incident (Story, 1993).

On November 18, 1999, the most unthinkable tragedy that could have occurred in College Station, Texas, happened. Nearly 10,000 logs about 30 feet long and eight to ten inches thick erected around a 70-foot center pole that make up the Texas A&M University traditional bonfire collapsed. Ten students were killed and over thirty were injured (White, 2000).

On April 20, 1999, the community of Littleton, Colorado was subjected to an act of ultra-violence at Columbine High School. In this incident, 15 lives were lost and approximately 163 people were injured. Approximately 1,000 public safety officials from 50 agencies responded to synergistically mitigate this incident (Seidel, Lee, 1999).

In both of these incidents, along with many others across the United States, all after action reports strongly suggested adopting the Incident Management System and using it on a daily basis.

No better example of the need for the incident management system has ever been demonstrated in Jefferson County, Alabama, than the violent and deadly tornado of 1998 (see Figure 4). According to the After Action Report, on April 18, 1998, Jefferson and St. Clair Counties were struck by a tornado with winds in excess of 260 miles per hour and a damage path of up to a mile wide. In the wake of this storm, 36 people lost their lives, 273 were injured, and

property damage was estimated at over \$300 million. This incident occurred over an area of approximately eight different towns, exhausting all local resources. The affected counties were declared disaster areas and drew emergency responses from the Federal Emergency Management Agency, Department of Labor, Small Business Administration, National Guard, National Volunteer Relief organizations, numerous volunteers, and dozens of state and local agencies.

**Figure 4**

**Birmingham News Article – F-5 Tornado**



The Vestavia Hills Fire Department was established in 1950. Since its beginning, the VHFD has responded to many different types of emergency incidents, ranging from mass casualty (see Figure 5), technical rescues (see Figure 6), and severe weather events (see Figure 7). The greatest number of fires that the VHFD responds to are residential structure fires. Fortunately, to date the fire department has not experienced a firefighter fatality during any emergency operation, although there have been a few close calls.

Figure 5

News Article of MCI



Figure 6

New Article, Technical Rescue



**Figure 7****News Article of Vestavia Hills Tornado**

NEWSLIBRARY DOCUMENT DELIVERY
Birmingham News (AL) April 7, 2000 Section: NEWS Page: 01-C
<p style="text-align: center;"><b>STORMS DAMAGED MORE THAN 400 HOMES IN COUNTY</b> Val Walton and Carol Robinson, News Staff Writers</p> <p>More than 400 homes across Jefferson County were damaged by Monday's storms. Jefferson County Emergency Management Agency and federal officials toured the sites on Thursday.</p> <p>Unofficial estimates show 200 homes in Forestdale, 100 in Mountain Brook and between 100 to 150 in Vestavia Hills suffered damage ranging from minor to total loss, said Charlie Quackenbush, EMA's plans officer.</p> <p>"There are lots and lots of trees down in all those areas," Quackenbush said. "I am amazed that a lot more damage wasn't done. The trees literally looked like pick-up sticks."</p> <p>More homes received minor damage outside those three communities, but reports have not been compiled yet, officials said. (Damage, Page 2C 1C) The American Red Cross will offer assistance in Forestdale by opening a service center at Trinity Baptist Church, 2730 Adamsville Parkway, beginning at noon today. The center will remain open until 5 p.m. today and from 9 a.m. to 5 p.m. Saturday.</p> <p>Meanwhile, the cleanup continued at the Shades Mountain Water Filter Plant, which was in the direct path of the tornado that hit Vestavia Hills and Mountain Brook. Specially trained crews finished removing roofing material laced with cancer-causing asbestos from the medians and shoulders of U.S. 280. Officials alerted the public Wednesday that roofing shingles might have blown onto the highway, the woods, lawns and properties of nearby neighborhoods. Asbestos poses a greater threat in the air than in water, according to the U.S. Environmental Protection Agency. Contractors also removed material from inside the plant, allowing Birmingham Water Works employees to continue working. But full asbestos abatement work will begin by this weekend or early next week, authorities said.</p> <p>On Thursday, the plant continued to operate with 34 of its 46 water filters, said Ron Mims, an assistant general manager. The plant, the state's largest, pumped 50.1 million gallons of water Wednesday. "That's about normal usage for that area," Mims said. "We are still asking customers to conserve water because we don't know when a filter may go out."</p> <p>When fully operational, the plant can treat 80 million gallons of water daily.</p>
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The fire department's proactive approach to safety issues, providing an on-scene commander, utilizing an accountability system, and practice of standard operating procedures (SOP's) are contributing factors to this safety record. However, a post-incident analysis in the greatest majority of these operations, including the residential fires, strongly recommended the adoption of an Incident Management System.

Before an SOP can be developed and the IMS implemented, the subject must be researched. The Executive Fire Officer Program of the National Fire Academy assisted in this research by introducing the author of this report to the Components of Fire Service Operations in Emergency Management, as outlined in Unit 2 of the Executive Analysis of Fire Service Operations in Emergency Management Course manual.

## **LITERATURE REVIEW**

The pages of history are strewn with stories of great cities that were destroyed by fire:

London - 798, 982, 1212, 1666

Boston - 1631, 1653, 1679

Chicago - 1871

Baltimore - 1904

San Francisco - 1906

Something important happened after each of the fires listed laid waste to a city: improvements ensued. The American Fire Service has been based upon a series of historic catastrophes. In the wake of each succeeding disaster, improvements were made (Brannigan, 1998).

In order to limit the chaotic effects common to disasters and provide a safer environment for emergency responders, it is vital to the operations of the fire service that a method of incident management be in place (Smith, 2001). There has been a realization that organization is needed to properly manage an incident and ensure the safety of firefighters. This has led to the implementation of incident management systems, which have gained widespread acceptance.

Literature searches for this applied research project began at the National Fire Academy's (NFA) Learning Resource Center (LRC) in May 2001 during the author's attendance of the Executive Analysis of Fire Operations in Emergency Management Course.

To perform a comprehensive literature review, the following agencies, along with numerous periodicals and newspaper articles, were queried for information:

- National Fire Protection Association (NFPA)
- Occupational Safety & Health Administration (OSHA)

Fortunately, there has been a substantial amount of documentation concerning incident management. This section will review and discuss the history, components, major functions, staff positions, and existing standards for an effective incident management system as represented in current literature.

### **History of the Incident Command System**

According to the Incident Command System (ICS) student manual (1989), in the early 1970's, a series of major wildland fires in Southern California prompted municipal, county, state, and federal fire authorities to form an organization known as Firefighting Resources of California Organized for Potential Emergencies (FIRESCOPE). Organizational difficulties involving multi-agency responses were identified by FIRESCOPE. Other difficulties included ineffective communications, lack of accountability, and lack of a well-defined command structure. Their efforts to address these difficulties resulted in development of the original Incident Command System for effective incident management. Although originally developed for wildland settings, the system ultimately evolved into an "all-risk" system, appropriate for all types of fire and non-fire emergencies.

Since the development of the ICS, as further explained in the student manual for Executive Analysis of Fire Service Operations in Emergency Management (2001), the fire service has experienced several challenges in understanding its application. As a result, inconsistencies in the system began to develop; other hybrid systems came into existence, further



distancing a common approach to incident command. A single incident management system is critical for effective command and control of major incidents. At these incidents, a single department may interface with other agencies on the local, state, and federal level. In order to reduce the inherent confusion that may be associated with larger scale incidents, using a common system is a must.

Recognizing the challenges in the fire service faced in applying a common approach to incident command, the National Fire Service Incident Management System Consortium was created. Developed in 1990, its purpose is to evaluate an approach to developing a single Command system. The Consortium consists of many individual fire service leaders, representatives of most major fire service organizations, and representatives of Federal agencies, including FIRESCOPE. One of the significant outcomes of the work done by the Consortium was the identification of the need to develop operational protocols within ICS, so that fire and rescue personnel would be able to apply the ICS as one common system. In 1993, as a result of this, the IMS Consortium completed its first document: *Model Procedures Guide for Structural Firefighting*. FIRESCOPE adopted this in principle as an application to the Model FIRESCOPE ICS. The basic premise is that the organizational structure found in the FIRESCOPE ICS is now enhanced with operational protocols that allow the Nation's fire and rescue personnel to apply the ICS effectively regardless of what area in the country they are assigned. The National Fire Academy (NFA), having adopted the FIRESCOPE ICS in 1980, has incorporated this material in its training curriculum and will continue to reach the thousands of fire service personnel with one common incident command and control system.

It is important to note that the FIRESCOPE Model ICS has had other applications or modules similar to the structural firefighting applications that have been in place for some time.

These create a framework for other activities to operate in and further enhance the use of ICS.

As an example, there are the Multi-Casualty, Hazardous Material, and the Urban Search and Rescue applications.

Since the 1970's, the value of the Incident Command System as an emergency management tool has been proven repeatedly by fire service agencies that have implemented it.

On the night of Saturday, February 23, 1991, fire struck One Meridian Plaza in Philadelphia, Pennsylvania. During nearly 19 hours of firefighting the Philadelphia Fire Department (PFD) committed approximately 316 personnel operating 51 engine companies, 15 ladder companies, and 11 specialized units, including EMS units, to the 12-alarm incident. The incident was managed by 11 battalion chiefs and 15 additional chief officers under the overall command of the Fire Commissioner. All apparatus and personnel were supplied without requesting mutual aid. The PFD uses an incident command system based on the ICS system taught at the National Fire Academy. The PFD was confronted with an essentially impossible situation and did a commendable job of managing one of the worse high-rise fires in history (Eisner, Manning, 1991).

### **Eight Components of IMS**

The following eight components work together to make a successful incident management system:

- Common Terminology
- Modular Organization
- Integrated Communications
- Central Command Structure

- Consolidated Action Plans
- Manageable Span-of-Control
- Pre-designated Incident Facilities
- Comprehensive Resource Management

Each of these components are discussed below.

### Common Terminology

The need for common terminology in any emergency management system is essential. To prevent confusion, when multiple incidents are responded to within the same jurisdiction using the same radio frequency, each incident should be named (ICS-SM, 1989, pg. 1-6). Common names are established and used for all personnel and equipment resources conducting tactical operations within the ICS as well as for all facilities in and around the incident area. One of the most common statements expressed by persons who have experienced a mass casualty event is "I couldn't communicate!" (Lalonde, 1991).

### Modular Organization

The "ICS for Hazardous Materials Incidents Series" video produced by Action Training Systems defines modular organization as the organizational structure which is developed in a modular fashion based on the kind and size of the incident. The organizational staff builds from the top down. Additional levels of organization are added based on the unique needs of each incident.

### Integrated Communications

All communications at the incident should be in plain English; no 10-codes should be used. According to the National Fire Protection Association (NFPA) 1201, developing fire protection services for the public (1989), emergencies that are of a catastrophic nature require multi-jurisdictional assistance are most likely to turn into an incident management nightmare without a common link of communication and management between each department.

### Central Command Structure

The command function may be conducted in two general ways. Single command is conducted under the unity of command rule (each individual reports to only one supervisor), when there is no overlap of jurisdictional boundaries or when a single IC is designated by the agency with overall management responsibility for the incident. Under the unified command concept, all involved agencies contribute to the command process (ICS SM, 1989, pg. 1-6).

### Consolidated Action Plans

Every incident needs some sort of consolidated action plan (ICS SM, 1989, pg. 1-7). Written action plans are usually required when resources from multiple agencies are used, when several jurisdictions are involved, or when changes in shifts of personnel or equipment are required.

Fire departments and other agencies with the potential for working together at emergency incidents should plan together to identify roles and responsibilities when resources are shared and to ensure a smooth interface during control operations.

### Manageable Span-of-Control

Span-of-control is defined as the number of subordinates one supervisor can manage effectively. Guidelines for the desirable range are from three to seven persons; the optimum number is five subordinates per supervisor (ICS SM, 1989, pg. 1-7).

### Designated Incident Facilities

Designated incident facilities such as a Command Post (CP), an incident base, or a staging area, may be established based on the requirements of the incident. The IC determines when these facilities are established and where they are located (ICS SM, 1989, pg. 1-7). Cowardin (1989) states, "Establishing generic command sends a clear signal to all personnel that ICS is in use. Officers on incidents with two or more units should be required to name generically, using a simple name relating to the situation. " Rubin (1997) further explains, "The incident commander must establish and operate out of a command post. The command post can range from the front seat of the first-in engine to a designated command post vehicle. "

### Comprehensive Resource Management

Comprehensive resource management, when performed effectively, should maximize resource use, consolidate control of large numbers of single resources, and reduce the communication load (ICS SM, 1989, pg. 1-7).

### Five Major Functions of IMS

The incident management system has a standardized way of assigning responsibilities at the strategic level. The five general staff positions provide the structure for building incident strategy. The following is a concise description of the functions for the five general staff position in the IMS.

#### Incident Commander:

- Develops incident strategy.
- Approves final plans.
- Approves request for resources.
- Implements the five functions as needed.
- Retains responsibility for non-delegated function.

#### Planning Section Officer:

- Collects, evaluates, disseminates incident information.
- Gathers and analyzes incident data.
- Develops alternative tactical operation plans.
- Conducts planning meetings.
- Prepares action plans.
- Prepares incident demobilization plan.
- Utilizes four primary assistance units:
  1. Resource Unit
  2. Situation Unit

3. Documentation Unit

4. Technical Specialist

Operation Section Officer:

- Manages the incident tactical operations.
- Implements plans and strategies.
- Utilizes resource categories:
  1. Single Resources
  2. Strike Teams
  3. Divisions
  4. Branches
- Utilizes Air Operations.
- Directs all functional groups.

Logistics Section Officer:

- Provides support to incident.
- Utilizes logistical sub-units:
  1. Communications
  2. Medical Support
  3. Food and Supplies
  4. Rehabilitation Facilities
  5. Operational Supplies

Finance Section Officer:

- Establishes time unit.
- Establishes procurement unit.
- Creates claim unit.
- Creates cost unit.

The five general staff officers are appointed when needed to assist the IC in looking at the overall strategy. Each of the five positions have specific roles and responsibilities in the incident management system.

**Command Staff Positions**

The incident management system includes three important positions whose officers are intended to function as an extension of the Incident Commander's Authority. These positions are:

Safety Officer:

- Assesses hazardous, unsafe conditions and practices.
- Facilitates personnel safety.
- Has authority to suspend or correct immediate unsafe operations and responsibility to notify the IC afterwards.

Public Information Officer (PIO):

- Establishes and maintains media contact.
- Communicates complete, accurate incident information in a timely manner to the media.



- Incident information includes:
  1. Cause of Incident.
  2. Scope of Incident.
  3. Current situation.
  4. Resource Commitment.

Liaison Officer:

- Acts as a point of contact for representatives from assisting agencies.

If any of the five general staff or three command staff positions are not delegated, it is the responsibility of the IC to handle them.

### **General Requirements of OSHA=s Hazardous Waste and Emergency Response Standard**

Bruce Teele (1987), Fire Service Specialist for the NFPA Public Fire Protection Division, reports, "SARA is quite a gal. The amazing child of the United States Congress, she was born on October 17, 1986, when President Ronald Reagan signed into law the Superfund Amendments and Reauthorization Act of 1986 (SARA). Sara is Public Law 99-499. SARA has two interesting, close friends: the Occupational Safety and Health Administration (OSHA), and the Environmental Protection Agency (EPA). This trio is making quite an impact on the U.S. Fire Service."

When SARA became law, it directed OSHA to develop and to issue an interim final rule within 60 days, and a final standard within one year. The interim final rule, which took effect on December 19, 1986, is an OSHA regulation known as 29 CFR Part 1910.120, "Hazardous Waste Operations and Emergency Response' (HAZWOPER)." The final rule took effect on March 6,

1989, with a one-year implementation period, at which time all sections of the document must be met by response agencies. Excerpts from the OSHA standard 29 CFR Part 1910.120 are included in Appendix C.

Paragraph 1910.120 (q)(3)(ii) requires the use of an incident management system, and paragraph q (3)(vii) requires the incident commander to appoint a safety officer of hazardous materials incidents. Failure to comply with any portion of 29 CFR 1910.120 (q) may result in a serious citation issued to the emergency response agency by an OSHA Compliance Officer (OSHA Fact Sheets, 1992).

One of the most frequently asked questions by career and volunteer response organizations was, do we have to comply with this standard if we are not an OSHA plan state? Title I, Section 126 of SARA required the EPA to issue, within 90 days of the final OSHA regulations, a set of regulations identical to the OSHA final rule; this would cover those state and local government employees not covered under a state OSHA program (Springfield, 1989).

The OSHA HAZWOPER standard (1910.120) also makes reference to many NFPA standards when outlining the training and emergency requirements, including the use of an incident management system.

### **National Consensus Standards Pertaining to Incident Management Systems**

The literature review recognized several National Fire Protection Association (NFPA) standards that identify the requirements for use of an incident management system. In order to provide a standard of care to its members, the Vestavia Hills Fire Department officially adopted the NFPA 1500 Standard on Fire Department Occupational Safety and Health. Although

progress has been slow, several proactive steps have been taken in support of the commitment to safety for department personnel.

In addition to NFPA Standard 1500, there are other NFPA documents that must be examined before the components of an incident management system can be developed. NFPA 1561, "Standard for Fire Department Emergency Management Systems, " provides broad guidelines for elements that should be included in an emergency management system. Another standard noted here is NFPA 1201, 1999 Edition, "Standard for Developing Fire Protection Services for the Public, " which states that, "An incident management system shall be provided to form the basic structure of all emergency operations. " NFPA 1500, 1999 Edition, outlines the requirements for an incident management system as it relates to a fire service occupational safety and health program. Chapter Four of NFPA 1521, "Standard for Fire Department Safety Officer," explains the functions of the incident safety officer when operating as part of the command staff in an incident management system. Excerpts from NFPA, Standards 1201, 1521 and 1500 are included in Appendix D.

### **Standard Operating Procedures for an Incident Management System**

A review of the relevant literature indicates that standard operating procedures (SOP's) for an Incident Management System are vital for firefighter safety and effective incident operations. Dunn (2001, pg. 97) states, "written SOP's for firefighters for the first arriving incident commander and for chief officers have made firefighting safer. Standard procedures state who does what, when, where, and why."

This research project is intended to provide an SOP to guide the Vestavia Hills Fire Department in providing a safer and more effective fireground. This applied research project is specifically intended to identify the components needed for an effective SOP and determine the equipment required for an incident management system.

As noted by Cook (1999), an SOP may be written in any of an unlimited number of formats. However, it is important to choose a format that fits the department's needs. Although the Vestavia Hills Fire Department has a standard SOP format, the publications entitled "Model Procedures Guide for Structural Firefighting," produced by the National Fire Service Incident Management System Consortium Model Procedures Committee (1993), and "Developing Effective Standard Operating Procedures for Fire and EMS Departments," produced by IOCAD, Emergency Services Group for the Federal Emergency Management Agency (1996) were instrumental in improving our present process.

In reference to the need to create SOP's for incident operations, Alan Brunacina, Fire Chief, Phoenix (AZ) Fire Department (1985) stated, "Standard fireground procedures are a set of organizational directives that establish a standard course of action on the fireground to increase the effectiveness of the firefighting team."

### **Commonly Asked IMS Questions**

In order to clarify some misconceptions and address the main functions of an incident management system, answers to the following commonly asked questions were ascertained from the available literature.

- Is the incident Management System (IMS) the same as the Incident Command System (ICS)?

Yes. These terms are synonymous. Weider (1999) explains, "the National Fire Service Incident Management System Consortium is an organization that grew out of an initiative by the International Association of Fire Chiefs (IAFC) to merge the FIREScope Incident Command System (ICS) and the Phoenix Fire Ground Commander (FGC) system into one incident management system that could be used in all jurisdictions. A consensus on this merger was reached in 1993."

- Should IMS be used at every incident?

Model Procedures Guide for Structural Firefighting (1993) states, "The first fire department member of the fire unit to arrive on the scene shall assume command of the incident and initiate whatever parts of the Incident Management System are needed to effectively manage the incident scene."

- When should a formal Command Post (CP) be established?

The answer to this question has remained unchanged for many years. Layman (1953) reports, "When directing major operations, a commanding officer should establish a command post at an advantageous location and supervise operations through staff officers and aides who are trained and qualified to perform such duties."

- Why do we need to have Incident Command?

It provides an effective tool for management and control of incident resources and activities. It provides for firefighter safety while enhancing a professional image (NFA-IG, 1987, pp. 1-29-1-32).

- Where can Incident Command be used?

Incident Command is a concept applicable throughout the United States and has been tested and proven on millions of emergency incidents (NFA-IG, 1987, pp. 1-33).

- How can the Incident Command concept be applied?

The Incident Command concept can be applied by using a system that provides an effective command structure utilizing the five basic functions, that is simple to implement, and uses standardized terms and procedures (NFA-IG, 1987, pp. 1-37).

- What training is needed for organizations to implement an incident management system?

The author of this report believes that the implementation of a standard operating procedures (SOP) for any emergency operation begins with the training of personnel to properly perform all functions of the SOP. The command staff at

Vestavia Hills Fire Department agreed on the need to locate agencies that provide incident management training.

### **Incident Management Training**

The University of Alabama at Birmingham (UAB) Center for Labor Education and Research (CLEAR) recently received a training grant from the National Institute of Environmental Health Sciences. The grant provides free training for firefighters in a variety of subjects. The Incident Management System is one of the courses offered. The course covers topics referenced by NFPA 1561, Incident Management Systems, and is presented in two days of "Train the Trainer" scenario-based training using a realistic approach (see course flyer, Appendix F).

The Vestavia Hills Fire Department (VHFD) has taken advantage of this opportunity and at the time of this writing has trained nine of its members in IMS, with four more scheduled in October 2001. The VHFD plans to have the entire department trained and the Incident Management System implemented by December 1, 2001.

### **Equipment Required for Incident Command**

Specific Incident Command (IC) equipment for emergency operations will vary according to the type of incident (mass-casualty, hazardous material, structure fire). While the vast array of these possible scenarios that can be encountered preclude knowing every possible command tool or hazard reference that will be utilized, the basic command items can be determined

from past events. Although IC equipment requirements may vary, there are a number of commonly-used pieces of command equipment that should be included in every command vehicle inventory.

In order to accomplish the goal of ensuring personnel safety, the IC must document incident progress and tactical assignments, while maintaining an accurate account of available resources (Morris, 1999). Even the best IC can only retain so much information in memory. A pre-printed tactical worksheet permits an organized and standard approach to documenting incident activities.

There are a variety of methods an IC can use to record the information on an incident, ranging from a standard clipboard and paper to laminated boards and colored tactical worksheets (Coleman, 1997). Forcing yourself to carry a clipboard as you prepare to take command of an incident will improve your performance. The Vestavia Hills Fire Department (VHFD) has purchased the colored tactical multi-use worksheets (see Figure 8).

According to the Personnel Accountability System Technology Assessment Manual, "In some form or another, regardless of size or nature, personnel accountability is a part of every incident to which fire and rescue personnel may respond. These tracking systems range from elaborate Global Positioning System (GPS) to some department simply writing down the person's name at the command post." As previously noted, the VHFD presently has a personnel accountability system in place that meets the recommendations as outlined in the NFPA Standard 1500 (see Figure 9).

Early in any incident, establishing control zones is a priority for the incident commander (Noll, Hilderbrand, Yvorra, pg. 133, 1994). First, secure the entry points and then establish an isolation perimeter around the hazard. Barrier tape is often used to restrict entry into the hazard

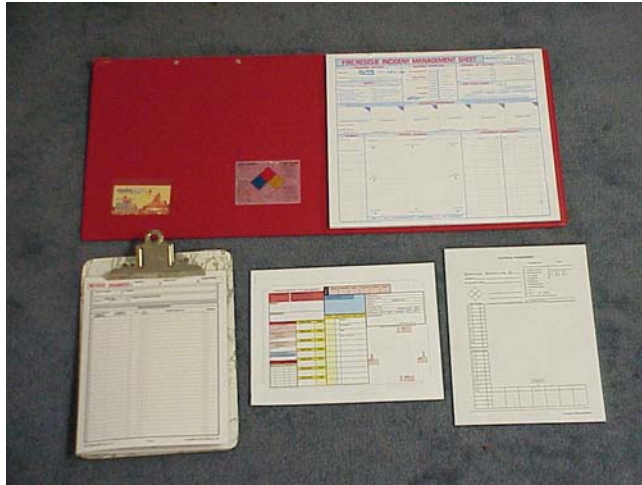


zones and identify the command post, triage, and staging areas. The VHFD utilizes a variety of different barrier tapes for these purposes (see Figure 10). The use of checklists, pre-incident plans, SOP's, and reference manuals will assist the incident commander in developing the proper tactics for the incident plan (see Figure 11).

Based on these recommendations, an Incident Commander equipment and sources list was developed and is included in Appendix G.

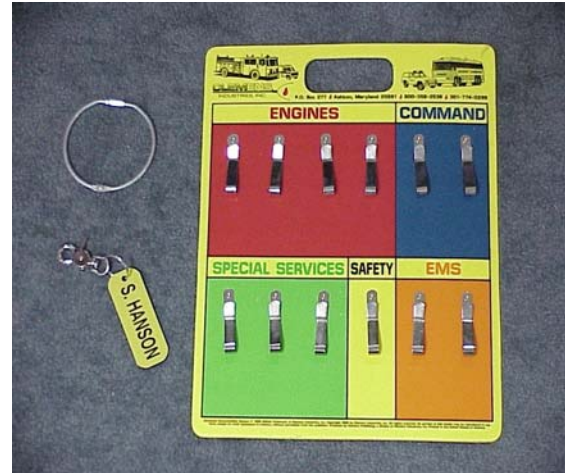
### Figure 8

## VHFD IC Tactical Board



### Figure 9

## VHFD Accountability System



**Figure 10**

## VHFD Scene Barrier Tape



**Figure 11**

## VHFD References & Checklist



**Summary of Findings in Literature Review**

In summary, the literature review reinforced the need for the Vestavia Hills Fire Department to enhance the safety of personnel involved in fire suppression and other hazardous duties by providing an incident command system. The existing literature also emphasized the value of the proper use of all available resources while effectively delegating responsibilities. Literary research identified the existing consensus standards that provide excellent guidance in achieving all these requirements.

## **PROCEDURES**

The literature findings provided important information that was used in answering research questions 1, 2, 3 and 4, and developing an Incident Management System SOP for Vestavia Hills Fire Department, as discussed in this section.

### **Definition of Terms**

The following definitions are included to assist in the understanding of terms in this report.

Accountability: A system or process to track resources at an incident scene.

Code of Federal Regulations (CFR): The documents that include federally promulgated regulations for all federal agencies.

Command Staff: Positions that are established to assume responsibility for key activities in the incident management system that are not a part of the line organization.

Emergency Operations: Activities of the fire department relating to rescue, fire suppression, emergency medical care, and special operations.

General Staff: Staff that includes functions of operations, planning, logistics, and finance.

Hazard: The potential for harm or damage to people, property, or the environment.

Incident Commander (IC): The fire department member in overall command of an emergency incident.

Incident Management System (IMS): A system of incident control of personnel and resources.

Incident Safety Officer: An individual appointed to respond or assigned at an incident scene by the incident commander to perform the duties and responsibilities specified in NFPA standard 1521.

Liaison: The coordination of activities between the fire department and other agencies.

National Fire Protection Association (NFPA): A not-for-profit membership organization that uses a consensus process to develop model fire prevention codes and firefighting training standards.

National Institute for Occupational Safety and Health (NIOSH): A federal agency which, among other activities, test and certify respiratory protective devices and air sampling detector tubes and recommends occupational exposure limits for various substances.

Occupational Safety and Health Administration (OSHA): This administration is responsible for regulating safety and health in the workplace. OSHA issues safety and health regulations and sets standards for the occupational environment.

Public Information Officer: Provides timely information to the media, authorized by the incident commander.

Standard Operating Procedure (SOP): Specific information and instruction on how a task or assignment is to be accomplished.

Strategy: A goal, or set of goals, used to manage incident scene operations.

Triage: The sorting or selection of patients to determine the priority of care to be rendered to each.

Unified Command: A standard method to coordinate command of an incident where multiple agencies have jurisdiction.

Research for this project also included an evaluation of the Vestavia Hills Fire Department incident command equipment inventory. This equipment inventory, along with information discovered through the literature search, was used in identifying new equipment

needed for commanding scene operations and developing the incident commander's equipment list, as discussed in the following section.

A single page, nine-item survey was developed to assist the author in determining the capability of other closely surrounding fire departments within mutual aid distance of Vestavia Hills Fire Department to implement IMS and identify IMS SOP's and command equipment utilized by those departments (see Appendix A). The nine items consisted of seven response questions and two questions concerning vehicles and equipment (see Appendix B). These questions required a response of either yes or no, or check mark(s). To encourage responses to the survey, the author offered to provide any interested department with a copy of the SOP (see Appendix E) and/or the equipment list (see Appendix G) developed from the applied research project.

The survey was mailed on June 30, 2001 to 30 fire chiefs using a mailing list provided by the Central Alabama Fire Chiefs Association (CAFCA) (See Appendix A). The mailing included career, volunteer, and combination departments within reasonable "Mutual Aid" distance to the Vestavia Hills Fire Department.

The single page survey had a few notable limitations. One limitation was that since respondent fire departments were not asked to identify themselves, it is not known if a representative sample was achieved with regard to an actual mutual aid department. Another limitation was that many departments responding did not answer question seven, leaving the author to conclude the respondents did not understand the meaning of the question. Another limitation is that it is not known if all respondents answered the response questionnaire truthfully.

## RESULTS

### Answers to Research Questions

1. What regulations and national consensus standards exist concerning incident command systems.

- Occupational Safety and Health Administration (OSHA) standards:  
29CFR 1910.120, Hazardous Waste Operations and Emergency Response  
29CFR 1910.156, Fire Brigades
- Environmental Protection Agency (EPA) standard:  
40 CFR Section 311, Hazardous Waste Operations and Emergency Response
- National Fire Protection Association (NFPA) standards:  
NFPA 1561, Standard for Fire Department Incident Management System  
NFPA 1500, Standard on Fire Department Occupational Safety and Health  
NFPA 1521, Standard for Fire Department Safety Officer  
NFPA 1201, Standard for Developing Fire Protection Services for the Public

OSHA promulgated the standard, 1910.120 to better protect employees who engaged in handling chemicals at uncontrolled hazardous waste sites and licensed hazardous waste treatment storage and disposal sites, as well as for personnel who must respond to emergencies involving hazardous chemicals. This includes firefighters, police, and emergency medical service personnel. Compliance with these OSHA standards or equivalent standards by public agencies is mandated by law in states that operate under state occupational safety and health plans. However, public agencies are



not legally required to comply with OSHA regulations in states such as Alabama. They are regulated by the Environmental Protection Agency (EPA). While the NFPA standards are not mandated by law, they are considered the "benchmark" for operational standards for the fire service.

2. What elements are needed for an effective Incident Management SOP?

The key elements of a standard operating procedure for the VHFD must include language and specific procedures to assure that the safety of firefighting personnel is maintained at all times and all available resources are utilized efficiently. The SOP should also include a purpose statement and define roles and terms to assist its understanding by all fire department personnel. Finally, the SOP must also include sections required by the VHFD to be consistent with the department's other operational policies such as "on-scene accountability, emergency radio traffic, and rapid intervention team operations."

By reviewing the different standard operating procedures found through the literature review, an SOP for Incident Management was developed for the Vestavia Hills Fire Department and is included as Appendix E to this report. Also, to assist in the training of VHFD fire department personnel, an SOP implementation presentation was developed from this project and is included in Appendix H to this report.

The SOP and equipment list for implementing the Incident Management System were reviewed by all fire department battalion chiefs and affirmed by the chief of the department at the monthly staff meeting held on September 13, 2001. Final

implementation of the SOP will conclude with the training of personnel. These training sessions are scheduled to begin in November of 2001.

3. What type of equipment is needed by an incident commander?

It was clear from the literature review that incident command equipment requirements varied according to local needs. This information is best found through pre-incident planning and other SOPs. Responses to the survey support this conclusion. A variety of sources reviewed during the literature research identified required equipment similar to that identified by respondents to the survey. Some new command equipment was discovered in the course of research and was added to the Vestavia Hills Fire Department inventory. Using all of the resources and the existing command equipment inventory of the Vestavia Hills Fire Department, an Incident Commander's equipment list was developed and is included in Appendix G to this report.

4. What is the current status of other area fire departments in implementing an incident management system?

Of the 30 fire departments surveyed, 15 department (50%) responded, and their responses were used in answering this question. The 15 respondent fire departments represented a wide range of populations served and types of services provided. The types of departments responding ranged from no paid personnel, to all paid personnel, to combination departments (Survey Item 2).

All fifteen of the respondent departments reported using an incident management system, with 14 (93%) of the departments reporting that they had an IMS SOP in place: however, three of these departments requested of the SOP when developed from this project.

Interestingly, only five (33%) of the 15 respondent fire departments reported that they implemented the incident command system at every incident (Survey Item 4).

Twelve (80%) of the 15 survey respondents supported the unified command concept, but only 7 (46%) agreed with using Area Command.

Only four (26%) of the 30 respondent fire departments reported spending more than 8 hours annually in training (Survey Item 5). The survey listed a variety of opinions concerning incident command equipment, with three (20%) departments reporting that they had a dedicated command post vehicle.

## **DISCUSSION**

Through this research project, the author examined a voluminous amount of information pertaining to Incident Management Systems. The literature review was broad in this subject area. The findings were comprehensive and detailed. The National Fire Protection Association offered several current editions of recommended practices pertaining to Incident Management Systems. The Occupational Safety and Health Administration (OSHA) promulgated one of the most important standards to date, 29 CFR 1910.120. In addition to this OSHA standard, Title I, Section 126 of the Superfund Amendment Reauthorization Act (SARA) required the Environmental Protection Agency (EPA) to issue, within 90 days of the final OSHA regulation, a set of regulations identical to the OSHA final rule, to cover those state and local government employees not covered under a state OSHA program. This regulation, especially paragraph (q), covering procedures for emergency responses to hazardous substances and the NFPA standards, were instrumental in the development of this project. Although public sector agencies are not legally required to provide an Incident Command System beyond a hazardous materials incident, many departments across the United States, including the Vestavia Hills Fire Department, have determined that the NFPA 1561, Standard for Fire Department Incident Management System, should be adopted by their organizations.

Equipment requirements for the incident commander varied, as discovered through the literature review and the response survey. The consensus of the findings indicated that equipment requirements are common in many ways, but may also be performance-based, depending on the type of services provided.

The equipment list included in Appendix G was developed based on the results of the literature review, VHFD preplanning reports, and the present equipment inventory of the Vestavia Hills Fire Department.

Results of the survey conducted for this project indicate a surprisingly high percentage of neighboring fire departments were using incident management, but not on every incident as the literature findings recommended. Also discovered in the response survey was that very little time was spent on training. In an attempt to raise awareness about these discrepancies, the author of this project intends to present an executive summary of the findings in this ARP at the Central Alabama Fire Chief's general meeting in the near future. The purpose of the presentation will be to raise awareness about incident management and the unified command concept, and to offer all interested fire departments a copy of the applied research project equipment list and SOPS, with a Microsoft Power Point presentation to assist in the implementation process.

## **RECOMMENDATIONS**

The following recommendations are based on an extensive search of applicable literature, federal regulations, national consensus standards, and a response survey conducted by the author.

### **Recommendation 1**

Fire Departments should adhere to the OSHA and EPA Hazardous Waste Operations and Emergency Response Standard and incorporate it into their IMS policy and procedures. NFPA standards of recommended practices should be consulted for guidance in establishing the requirements for an effective incident management system.

### **Recommendation 2**

Fire service training officers should explore training and educational opportunities for incident management systems.

### **Recommendation 3**

Fire service leaders should begin immediately determining their department's capability for implementing an incident management system. Once this is determined, the selection of the proper command equipment and the development of standard operating procedures can proceed.

## **CONCLUSION**

This report has been a part in a series of proactive steps to ensure the safety of all Vestavia Hills Fire Department personnel and the efficient and effective use of available resources. The response survey conducted for this project indicates that although many departments reported having an incident management system, there were many discrepancies in

its application.

As noted by Cline (1995), "Everyday, we face the challenge of providing the best service under what can be the worst conditions." That is why it is important to develop and practice the Incident Management System on an everyday basis. Review of equipment and adding specialty items to the inventory are needed.

In conclusion, history has shown that disastrous events can happen anywhere, anytime. Suddenly, they can range from a simple routine emergency to the most complex of incidents.

The person-in-charge must handle the incident efficiently and effectively. For that reason, there is an overwhelming need for an emergency management system that will work on all types of incidents, a system that will function effectively. IMS meets these needs. It can be used on a small, simple, routine incident, or a large, complex emergency incident. The Incident Management System has been used by fire departments of all types and sizes across the United States. It is an effective management system that has been validated from years of application.

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**Appendix A**  
**Cover Letter for Response Survey**

Dear Chief;

My name is Sam Hansen and I need your assistance! I serve as a Battalion Chief with the Vestavia Hills Fire Department. Part of my responsibilities with the City of Vestavia Hills is to participate in the Executive Fire Officer Program at the National Fire Academy, I am currently beginning my fourth year of the four years required. An important part of the program is to develop an applied research paper and implement the results in my department. My research topic is the Incident Management System.

My objectives with this research project are to explore the status of the fire service to implement the Incident Management System (IMS) in Jefferson County and to develop a set of standard operating procedures for the Vestavia Hills Fire Department.

Attached to this letter you will find a questionnaire entitled, "Incident Management Systems" SOP'S. Please take a few minutes and complete this form and return it to me by July 20, 2001. Also, if your department would like to have a copy of the SOP that I develop during this project I will be glad to forward it by request. For your convenience I have provided a self-addressed, stamped envelope. Thank you for your assistance in this important matter. Please contact me if you have any questions at: [batt.chief@vestaviiahills.net](mailto:batt.chief@vestaviiahills.net).

Sincerely,

Sam Hansen

## Appendix B

### Incident Management System Response Survey

### Incident Management System SOP's

#### Response Questions:

1. Does your department use an Incident Command (ICS) or Incident Management Systems? (IMS) **YES**\_\_\_\_**NO**\_\_\_\_

2. Check the statement below, which most accurately describes the type of staffing your department operates on a daily basis.

**Career**\_\_\_\_ **Volunteer**\_\_\_\_ **Combination**\_\_\_\_ **other**\_\_\_\_

3.Does your department currently have a SOP in-place for IMS/ICS? **YES**\_\_\_\_**NO**\_\_\_\_.

4.Does your department implement your system on every incident? **YES**\_\_\_\_**NO**\_\_\_\_

5. How many hours of IMS/ICS training do your response personnel receive annually? (Please check one)

8\_\_\_\_10\_\_\_\_12\_\_\_\_16\_\_\_\_>24\_\_\_\_

6.Does your department support the Unified Command concept? **YES**\_\_\_\_**NO**\_\_\_\_

7.Does your department support the Area Command concept? **YES**\_\_\_\_**NO**\_\_\_\_

#### Equipment Questions:

1.Does your department own a dedicated command post vehicle? **YES**\_\_\_\_**NO**\_\_\_\_

2.What type of other ICS/IMS equipment and on-scene records does your department use? (check all that apply)

**Binoculars**\_\_\_\_ **Tactical Board**\_\_\_\_ **Accountability System**\_\_\_\_ **Preplans**\_\_\_\_ **Quick-list**

**References**\_\_\_\_ **Barrier tape**\_\_\_\_ **On-Board computer**\_\_\_\_ **ICS Forms**\_\_\_\_ **ID Vest**\_\_\_\_

## **Appendix C**

### **Selected Excerpts From OSHA Standard 29 CFR 1910.120**

(a) Scope, Application, and Definitions

(1) Scope: This section covers employers and employees engaged in the following operations.

(v) Emergency response operations for release of or substantial threats of releases of hazardous substances and post-emergency response operations for such releases.

(3) Definitions: “Emergency response” means response to any occurrence which results, or is likely to result, in release of a hazardous substance due to an unforeseen event. “Hazardous substance” means any substance defined under section 11(14) or 104(2)(2) of CERCLA [Comprehensive Environmental Response, Compensation and Liability Act of 1980; commonly known as the “Superfund Act.”]; any substance listed by the U.S. Department of Transportation (DOT) and regulated as a hazardous material; and hazardous waste.

(1) Emergency Response

(3) Off-Site Emergency Response

(ii) Procedures

(A) The senior officer responding shall establish an incident command system (ICS). All emergency responders and communications shall be coordinated and controlled through the person in charge of the ICS.

- (C) Based on the hazardous substances and/or conditions present, the ICS commander shall implement appropriate emergency operations and assure that the personal protective equipment worn is appropriate for the hazards. As a minimum, personal protective equipment must meet the criteria of 29 DFR Part 1910.156 (e) (OSHA Fire Brigades Regulations).
- (D) Self-contained breathing apparatus (SCBA) shall be worn at all times during emergency operations involving exposure to hazardous substances or health hazards. Only positive pressure SCBA shall be used after 18 October 1988.
- (E) The ICS commander shall limit the number of personnel at the emergency site to those actively performing emergency operations. Operations in hazardous areas shall be performed using the “buddy system” in groups of two or more.
- (F) Backup personnel shall stand by with equipment ready to provide assistance or rescue. As a minimum, qualified basic life support (BLS) personnel shall be standing by with medical equipment and transportation capability.
- (G) The ICS commander shall designate a safety officer, knowledgeable in fire fighting or rescue operations and hazardous substance handling procedures, to identify and evaluate hazardous

substance handling procedures, to identify and evaluate hazards and provide direction in regard to safety of operations.

- (H) When the safety officer determines activities to be unsafe or to involve imminent danger, the safety officer shall have the authority to alter suspend, or terminate those activities and immediately notify the ICS commander of these actions.

Source: OSHA Standard 29 CFR 1910.120 (q)



## Appendix D

### Excerpts From Relevant NFPA Standards

Note: The following excerpts are directly quoted from the standards.

#### **NFPA 1500, 1997 Edition, Standard on Fire Department Occupational Safety and Health**

##### **Chapter 6 Emergency Operations**

##### **6-1 Incident Management.**

###### **6-1.1**

Emergency operations and other situations that pose similar hazards, including but not limited to training exercises, shall be conducted in a manner that recognizes hazards and prevents accidents and injuries.

###### **6-1.2**

An incident management system that meets the requirements of NFPA 1561, *Standard on Fire Department Incident Management System*, shall be established with written standard operating procedures applying to all members involved in emergency operations. All members involved in emergency operations shall be trained in the system. The incident management systems shall be utilized at all emergency incidents. The incident management system shall also be applied to drills, exercises, and other situations that involve hazards similar to those encountered at actual emergency incidents and to simulated incidents that are conducted for training and familiarization purposes.

###### **6-1.3\***

At an emergency incident, the incident commander shall be responsible for the overall management of the incident and the safety of all members involved at the scene. As incidents escalate in size and complexity, the incident commander shall divide the incident into tactical-level management units and assign an incident safety officer to assess the incident scene for hazards or potential hazards.

###### **6-1.4**

At an emergency incident, the incident commander shall establish an organization with sufficient supervisory personnel to control the position and function of all members operating at the scene and to ensure that safety requirements are satisfied.

###### **6-1.5\***

At an emergency incident, the incident commander shall have the responsibility for the following:

- (a) Arrive on-scene before assuming command.
- (b) Assume and confirm command of an incident and take an effective command position.
- (c) Perform situation evaluation that includes risk management.
- (d) Initiate, maintain, and control incident communications.
- (e) Develop an overall strategy and an incident action plan, and assign companies and members consistent with the standard operation procedures required by 6-1.2.
- (f) Develop an effective incident organization by managing resources, maintaining an effective span of control, and maintaining direct supervision over the entire incident, and designate supervisors in charge of specific areas or functions.
- (g) Review, evaluate, and revise the incident action plan as required.
- (h) Continue, transfer, and terminate command.
- (i) On incidents under the command authority of the fire department, provide for liaison and coordination with all other cooperating agencies.
- (j) On incidents where other agencies have jurisdiction, implement a plan that designates one incident commander or that provides for unified command. Interagency coordination shall meet the requirements of Section 2-3 of NFPA 1561, *Standard on Fire Department Incident Management System*.

## **NFPA 1521, 1997 Edition, Standard for Fire Department Safety Officer**

### **Chapter 4 Functions of the Incident Safety Officer**

#### **4-1 Incident Management System.**

**4-1.1\*** The incident safety officer shall be integrated with the incident management system as a command staff member, as specified in NFPA 1561, *Standard on Fire Department Incident Management System*.

**4-1.2\*** Standard operating procedures shall define criteria for the response or appointment of an incident safety officer.

If the incident safety officer is designated by the incident commander, the fire department shall establish criteria for appointment based upon 4-1.1 of this standard.

**4-1.3\*** The incident safety officer and assistant incident safety officer(s) shall be readily identifiable on the incident scene.

#### **4-2 Incident Scene Safety.**

**4-2.1** The incident safety officer shall monitor conditions, activities, and operations to determine whether they fall within the criteria as defined in the fire department's risk management plan. When the perceived risk(s) is not within these criteria, the incident safety officer shall take action as outlined in Section 2-5.

**4-2.2** The incident safety officer shall ensure that the incident commander establishes an incident scene rehabilitation tactical level management unit during emergency operations.

**4-2.3** The incident safety officer shall monitor the scene and report the status of conditions, hazards, and risks to the incident commander.

**4-2.4** The incident safety officer shall ensure that the fire department's personnel accountability system is being utilized.

**4-2.5** The incident commander shall provide the incident safety officer with the incident action plan. The incident safety officer shall provide the incident commander with a risk assessment of incident scene operations.

**4-2.6** The incident safety officer shall ensure that established safety zones, collapse zones, hot zone, and other designated hazard areas are communicated to all members present on scene.

**4-2.7** The incident safety officer shall evaluate motor vehicle scene traffic hazards and apparatus placement and take appropriate actions to mitigate hazards.

**4-2.8** The incident safety officer shall evaluate motor vehicle scene traffic hazards and apparatus placement and take appropriate actions to mitigate hazards.

**4-2.9\*** The incident safety officer shall monitor radio transmissions and stay alert to transmission barriers that could result in missed, unclear, or incomplete communication.

**4-2.10** The incident safety officer shall survey and evaluate the hazards associated with the designation of a landing zone and interface with helicopters.

#### **4-3 Fire Suppression.**

**4-3.1** The incident safety officer shall meet provisions of Section 4-2 of this standard during fire suppression operations.

**4-3.2** The incident safety officer shall ensure that a rapid intervention crew meeting the criteria in Chapter 6 of NFPA 1500, *Standard on Fire Department Occupational Safety and Health Program*, is available and ready for deployment.

**4-3.3** Where fire has involved a building or buildings, the incident safety officer shall advise the incident commander of hazards, collapse potential, and any fire extension in such building(s).

**4-3.4** The incident safety officer shall evaluate visible smoke and fire conditions and advise the incident commander, tactical level management units officers, and company officers on the potential for flashover, backdraft, blow-up, or other fire event that could pose a threat to operating teams.

**4-3.5** The incident safety officer shall monitor the accessibility of entry and egress of structures and the effect it has on the safety of members conducting interior operations.

#### **4-4 Emergency Medical Service Operations.**

**4-4.1** The incident safety officer shall meet provisions of Section 4-2 of this standard during EMS operations.

**4-4.2** The incident safety officer shall ensure compliance with the department's infection control plan and NFPA 1581, *Standard on Fire Department Infection Control Program*, during EMS operations.

**4-4.3** The incident safety officer shall ensure that incident scene rehabilitation and critical incident stress management are established as needed at EMS operations, especially mass casualty incidents (MCI).

#### **4-5 Hazardous Materials Operations.**

**4-5.1\*** The incident safety officer shall meet provisions of Section 4-2 of this standard during hazardous materials incidents.

**4-5.2\*** The hazardous materials incident safety officer shall meet the requirements of Chapter 4 of NFPA 472, *Standard for Professional Competence of Responders to Hazardous Materials Incidents*.

**4-5.3** The incident safety officer shall attend strategic and tactical planning sessions and provide input on risk assessment and member safety.

**4-5.4** The incident safety officer shall ensure that a safety briefing, including an incident action plan and an incident safety plan, is developed and made available to all members on the scene.

**4-5.5** The incident safety officer shall ensure that hot, warm, decontamination, and other zone designations are clearly marked and communicated to all members.

**4-5.6** The incident safety officer shall meet with the incident commander to determine rehabilitation, accountability, or rapid intervention needs. For long-term operations, the incident safety officer shall ensure that food, hygiene facilities, and any other special needs are provided for members.

#### **4-6 Special Operations.**

**4-6.1\*** The incident safety officer shall meet provisions of Section 4-2 of this standard during special operations incidents. The individual that serves as the incident safety officer for special operations incidents shall have the appropriate education, training, and experience in special operations.

**4-6.2** The incident safety officer shall attend strategic and tactical planning sessions and provide input on risk assessment and member safety.

**4-6.3** The incident safety officer shall ensure that a safety briefing, including an incident action plan and incident safety plan, is developed and made available to all members on the scene.

**4-6.4** The incident safety officer shall meet with the incident commander to determine rehabilitation, accountability, or rapid intervention needs. For long-term operations, the incident safety officer shall ensure that food, hygiene facilities, and any other special needs are provided for members.

**NFPA 1201, 2000 Edition, Standard for Developing Fire Protection Services for the Public****Chapter 10 Emergency Scene Management****10-1\* Purpose.**

An incident management system shall be provided to form the basic structure of all emergency operations of the fire department, regardless of the scale of the department or the emergency. An effective incident management system shall be designed to manage incidents of different types, including structure fires, wildland fires, hazardous materials incidents, emergency medical operations, and other types of emergencies that might be handled by the department.

**10-2 Establishment of On-Scene Command.**

Departmental procedures shall require the officer or member in charge of the first arriving unit on the scene of any fire or emergency to assume command and provide a brief situation report by radio that indicates the nature and extent of the emergency. The report shall identify the on-scene unit, confirm assumption of command, describe the incident parameters, state the obvious conditions, and briefly describe the course of action initiated by that unit. In addition, the first officer to arrive shall establish an effective command position, rapidly evaluate the situation (size-up), develop an action plan, assign other incoming units, and, if necessary, call for additional assistance.

**10-3\* Transfer of Command.**

Transfer of command from the first commander shall be carried out according to the accepted principles of this system, whereby continuity of command responsibility is formally turned over in person on the scene.

**10-4\* Command Options.**

When a command officer arrives with the first arriving units, this command officer shall assume command and establish a fixed command post. If a company is the first to arrive at the scene, it shall be the responsibility of the company officer to assume command until relieved by an officer of higher rank.

**10-5\* Command Structures.**

The incident commander shall delegate responsibility to subordinates in order to concentrate on overall strategy.

**10-6\* Deployment of Resources.**

Operational procedures shall be established whereby the high concentration of emergency vehicles on the scene of an incident will be alleviated in an orderly manner through use of a staging process.

## Appendix E

### Incident Management Standard Operating Procedure

#### VESTAVIA HILLS FIRE & RESCUE

SUBJECT---INCIDENT MANAGEMENT SYSTEM  
 TOPIC-----INCIDENT COMMAND

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#### PURPOSE:

The purpose of the Incident Management System is to provide for a systematic development of a complete, functional Command organization designed to increase the firefighter safety and the effectiveness of Command. This system is designed to be the everyday operating system for all Fire Department incidents responded to by the City of Vestavia Hills. Therefore, the foundation is laid for transition to larger and /or multi-agency operations

To be successful, control of all emergency scenes must be implemented initially by the first arriving officer/acting officer. This control must be maintained throughout the operational phase until the termination. This procedure identifies the standard operating procedures for establishing command; the duties of command; the transfer of command, and the termination of command. It places "COMMAND" responsibility on one individual at any time during the operation.

#### 23.1 Incident Commander

The INCIDENT COMMANDER (IC) is responsible for the "Command" function at all times. The other "command" areas of responsibility are, PLANNING, OPERATIONS, FINANCE and LOGISTICS. Unless delegated to subordinate commanders, the IC will be responsible and accountable for all command functions. The IC will also be responsible for Safety, Liaison and public information unless delegated to subordinates to carry out the requirements of these staff positions. As the identity of the Incident Commander changes, through transfers of command, these responsibilities shift with the title. The term "COMMAND" in this procedure refers jointly to both the person and the function.

#### COMMAND PROCEDURES:

Command Procedures are designed to accomplish the following:

1. Place the responsibility for Command on a certain individual through a standard identification system.
2. Insure that strong, direct and visible Command will be established as early as possible in the operation.
3. Establish an effective framework outlining the activities and responsibilities assigned to Command.
4. Provides a system for the orderly transfer of Command to subsequent arriving officers.

Responsibilities assigned to Command include the following specific outcomes:

1. Remove endangered occupants ("All clear") and treat the injured.
2. Stop the fire ("Under control") where he finds it.
3. Provide for the safety and survival of his personnel.

These outcomes are significant benchmarks in the fire operation. The accomplishment of each is documented by a radio report as indicated by () below.

**VESTAVIA HILLS FIRE & RESCUE**

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**Command Responsibilities**

Command is responsible for the following tasks as required by the circumstances of the situation within his judgment.

**Initial Responsibilities:**

1. Assume an effective command position.
2. Transmit a brief initial on-scene report.
3. Declare Command designation.
4. Rapidly evaluate situation (size -up).
5. Develop a plan of attack.
6. Assign units as required to meet tactical priorities.

**Continuing Responsibilities:**

1. Provide continuing overall command and progress reports until a transfer of command occurs.
2. Assign Sectors when situation requires subordinate Command divisions.
3. Review and evaluate attack efforts and revise plan of attack as needed.
4. Return companies to service and terminate "COMMAND".

**23.2 Establishing Command**

Command designation is determined by location of the incident. The first arriving officer/acting officer will designate the command identification term by using the location of the incident. Command designation will be communicated on all incidents regardless of number of units responding. This designation will not change throughout the incident. Using the shortened "Command" as opposed to, for example, "*Winn-Dixie Command*" during radio transmission will not be permitted. This practice would result in confusion anytime two or more incidents are in progress.

In the event that a second call is dispatched to a location that would normally be designed as one that is already in progress, the officer/acting officer will designate the second command located by using a more specific command designation than the general location used by the initial response.

Example: Engine 1 is dispatched to a car fire in the *Winn-Dixie* parking lot. Upon arrival, the officer/acting officer will establish "*Winn-Dixie Command*" in accordance with on-scene report procedures.

Engine 2; Rescue 31 responds to an MVA incident at the intersection near Winn-Dixie while Engine 1's car fire is in progress. Rescue 31 will establish "*Hwy.31 Command*".

Once Command is designated, that designation does not change! Individual units can be placed in service as their assignments are completed or when another alarm takes priority for a given unit; but, regardless of the units that go in-service or respond to another alarm, "Command" remains as first declared until that Command is terminated.

## VESTAVIA HILLS FIRE & RESCUE

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### Initial On Scene Report

Upon arrival, the initial on-scene officer will state a brief on-scene report of the situation found using the following criteria:

1. Designation of the unit arriving on scene
2. Brief description of the incident situation (number of stories, type of construction - see below, occupancy - see below, multi-vehicle MVC, Haz-Mat release, etc).

#### *Type of construction*

- \* *wood frame*
- \* *masonry*
- \* *brick veneer*
- \* *metal*

#### *Basic occupancy classification*

- \* *residential (single or multi-family)*
- \* *business*
- \* *commercial*
- \* *industrial*
- \* *educational*

3. Conditions present include immediate hazards (wires down, fuel release, etc.):
  - a. Nothing showing
  - b. Smoke Showing
    - \*light smoke
    - \*heavy smoke
  - c. Fire Showing
    - \*fully involved
  - d. Brief description of action taken
  - e. Declaration of strategy, when applicable
  - f. Identification of Command
7. Assign responding companies, request/release resources as required

Example: Dumpster Fire at Tree-Top Apts.

"Engine \_\_\_\_ is on the scene.

Dumpster with fire showing,

Engine \_\_\_\_ is "TreeTop Command"

## VESTAVIA HILLS FIRE & RESCUE

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Example: For an offensive structure fire on Southwood Rd.

*“Engine \_\_ is on the scene.*

*One story, wood frame, residential structure*

*Fire showing from bedroom window.”*

*“Engine \_\_ is taking an 1 ½” to the fire*

*This is an offensive fire*

*Engine \_\_ is Southwood Command”*

*(Fire alarm) “Engine \_\_ is on scene, reports one story wood frame with fire showing from bedroom.*

*Engine \_\_ is advancing and 1 ½”, This is an offensive operation.*

*Engine \_\_ is Southwood Command.”*

*“Southwood Command to Engine \_\_ (2<sup>nd</sup> due company) Lay a line into our Engine, Rescue \_\_ conduct primary search, Engine \_\_ ventilate.”*

Each incident has one point of communication with Fire Alarm and that point is the Incident Commander. All radio traffic to the units on scene and all traffic from the units to Fire Alarm will be routed through the IC.

NOTE: This does not preclude the option of the first arriving company officer/acting officer having another company officer arriving with him or close behind take Command. This may be by pre-arrangement or may be necessitated by circumstances; in either case it shall be confirmed by both parties by radio. “Passing Command” “Rescue 31 is on the scene reports one story wood frame house, fire showing from one window. Rescue 31 is passing command to Engine One”

### 23.3 Command Options “Modes”

When Command is the officer/acting officer on the first arriving unit, Command will normally be in a “MOBILE” mode. This Command option is acceptable for the following situations:

**Nothing Showing Mode:** These situations generally require investigation by the first arriving engine and rescue while holding staged companies at their level 1 staging positions (hydrant, sprinkler Siamese, etc.). Normally the officer can go with his company to investigate while utilizing his portable radio to continue Command.

**Fast Attack Mode:** Situations, which require the Incident Commander’s (IC) direct involvement for stabilization.

These situations include:

1. Offensive fire attacks
2. Critical life safety situations. (Rescue must be achieved in a compressed time frame)
3. Any situation where this direct involvement by the initial IC is required for the safety and welfare of firefighters.
4. Obvious working conditions that require further investigation by the initial IC.

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In many situations the initial IC will be in the Fast Attack mode. In this mode the IC establishes Command, sets a plan in motion that assigns responding companies, and gets to work!

This “fast attack mode” should not last more than a few moments and will end with one of the following:

1. Situation is stabilized.
2. Command is transferred.
3. Situation is not stabilized and the officer/acting officer must remove himself to a normal command position.

**Command Mode:** Situations by virtue of the size of the fire, the complexity/potential of the occupancy or the possibility of extension require strong, direct, overall command from the outset. In such cases, the officer/acting officer on the first arriving unit will initially assume a stationary Command position and maintain that position until Command is transferred.

In most cases where the initial arriving officer is a command officer, his efforts should automatically be directed towards establishing a Command Post and fulfilling the listed command responsibilities.

While the company officer assuming Command has a choice of modes and degrees of personal involvement in the attack, he continues to be fully responsible for the identified tasks assigned to the command function. In all cases, the initiative and judgment of the officer are of great importance. The modes identified are not strict rules, but general guidelines to assist the officer in planning his actions.

### 23.4 Transfer of Command

The first Fire Department unit or officer/acting officer to arrive on the scene will assume and retain Command until relieved within the following guidelines. Transfer of Command is not mandatory. This transfer occurs to improve the quality of Command and the organization of the incident.

Arriving ranking officers assuming Command will communicate with the officer being relieved by radio or preferably face-to-face on arrival. If a higher-ranking officer wants to effect change in the management of an incident, they must first be on the scene, then utilize this transfer of Command procedure.

The officer being relieved will brief the officer assuming Command indicating the following:

1. General situation status
  - \*Fire location, extent, conditions, extension.
  - \*Effectiveness of control efforts.
2. Deployment and assignments of operating companies and personnel.
4. Appraisal of needs for additional resources at that time.



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(What is the situation, what you are doing about it, and what do you need)

Only Car 8, after assuming Command, will advise Fire Alarm of such. This will keep all non-committed stations informed of the on-duty Car Officer status.

The officer assuming Command will utilize the officer relieved of Command to best advantage.

Anyone can effect change in the management of an incident in extreme situations relating to safety by notifying Command and initiating the required action. See Emergency Radio Traffic.

### 23.5 Terminating Command

As Command identifies a company is no longer needed within his tactical plan; he should release the company from Command and have them go in service from Command.

A unit, when released by Command, which has sufficient resources to be in-service, will communicate to Fire Alarm the unit is in service from Command.

Example: *"Engine 2 to Fire Alarm... Engine 2 in service from Highway 31 Command"*.

A unit, when released by Command, that does not have sufficient resources to be classified as in-service will communicate to Fire Alarm that the unit is in service from Command but out of service for equipment, manpower, etc. Such communication provides Fire Alarm with the necessary information to determine if units released from a Command are eligible to respond to subsequent incidents.

When all tactical objectives set by Command have been satisfied and remaining units are in a position to leave the incident scene, then Command should be terminated. Such termination must be transmitted to Fire Alarm and automatically places all remaining units in-service from the incident scene. Any unit not meeting in-service criteria will transmit out-of service condition to Fire Alarm on an individual basis.

Example of termination of Command:

*"Fire Alarm, Hampton Inn Command terminated."*

This transmission by Hampton Inn Command places all units assigned to this command in service. If a particular unit assigned to Hampton Inn Command is not available for call, they should immediately advise Fire Alarm and state the reason.

*"Engine Two to Fire alarm, Engine 2 out of service to load hose."*

When the Fire Marshal is remaining on the scene of an incident to continue with an investigation, with or without any other fire department unit remaining, command will be terminated. Fire alarm will be advised of the units remaining at scene.

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Example: *"Fire Alarm, Gay Way terminated. Car 7 and Engine 3 will remain at the scene to investigate."*

When a scene is turned over to the Police Department, Fire Alarm will be informed of this situation by Command by transmitting this information immediately after Command is terminated.

Example: *"Fire Alarm, Liberty Parkway Command terminated. Scene turned over to the Police Department"*.

## VESTAVIA HILLS FIRE & RESCUE

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Incident Command Structure describes a standard system of dividing command into manageable divisions of labor. The system addresses the Commander's span of control capabilities so operational safety and effectiveness is maintained at the highest level possible. "Command" has five functional areas of responsibility to maintain. These areas are:

- \*Command - Overall responsibility for the Incident.
- \*Planning - Developing the necessary plan to initiate and carry an operation to an end result.
- \*Operations - Supervise or coordinate the activities initiated by the plan of attack; and, provide necessary resources to accomplish the plan of attack.
- \*Logistics - Provide the necessary supplies to support the forces throughout the incident (medical, fluids, foam, food, shelter, etc.).
- \*Finance - Maintain records of expenditures, man-hours, etc., necessary to provide accountability for the cost of the operation. Provide proper documentation for recouping cost when allowed and possible.

The incident commander is always responsible for **COMMAND**. The IC is directly responsible and accountable for each of the other four functions unless he delegates the responsibility of one, more, or all to subordinate command levels.

### 23.1 Sectors - The first subordinate command designation.

Complex situations soon exceed the capability of one officer to effectively manage the entire operation. Sectors reduce the span of control of the overall command function to more manageable (sized) units. Sectorization allows Command to communicate principally with sector officers rather than companies, providing an effective command structure and organization.

Sector procedures provide a system for Command to divide large-scale operations geographically and functionally into effective units. These sectors are responsible for operations involving a manageable number of companies in close proximity to each other.

Sector procedures also provide an array of major functions, which may be selectively implemented according to the needs of a particular situation. This places responsibility for the details and execution of that particular function on a sector officer, relieving Command of tactical details.

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When effective sectors have been established, command can concentrate on overall strategy and resource allocation. Each sector officer is responsible for the tactical deployment of the resources at his disposal and for communicating needs and progress to Command. Command determines strategic objectives and assigns available resources to sectors where they are most needed.

Sectorization reduces the overall amount of fireground radio communication. Most routine communication is conducted inside the sector in a more effective face-to-face mode between companies and their sector officer. This process eliminates many of the details of company operations from radio communications.

**Command should begin to assign sectors based on the following factors:**

1. When he forecasts a situation that will eventually involve a number of companies beyond his capability to directly control. (In such cases, early recognition and sector assignments are critical.)
2. When he can no longer effectively cope with the number of companies currently involved in the operation.
3. Companies are involved in complex interior operations.
4. Companies are operating from tactical positions over which the Command has little or no control.
5. The situation is such that close company control is required: structural conditions, hazardous material, heavy fire load, marginal offensive situation, etc.

**Sectors will be regulated by the following guidelines:**

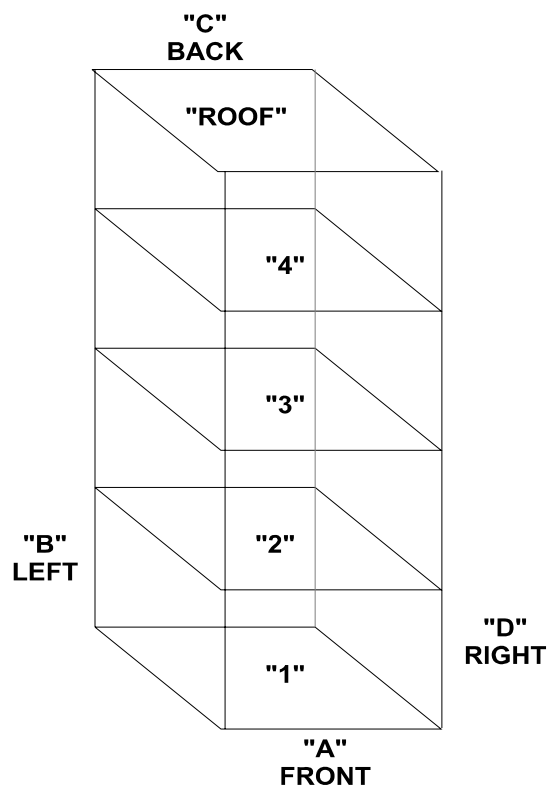
1. It will be the on-going responsibility of Command to assign sectors as required for effective operations
2. The number of companies assigned to a sector will depend upon conditions within the sector. Four to six companies represent the ideal span of control.
3. Command will maintain an awareness of the number of companies operating within a sector and the capability of that sector commander to effectively operate.
4. Sectors assigned to a specific operating area will be designated by alphabetical letters (Sector A, B, C or D) indicating side of building assigned: or, numerical designation based on floor assignment (Sector 1, 2, 3, etc.). In some cases, landmarks may provide better designators for operating (Roof Sector, Basement Sector, etc.)

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5. Building area and exposures will be sectorized by using the following system in conjunction with any other sector designations required by Command: (Front is determined by the main operational point of attack and is the side that Command is located)
6. Function sectors will be identified by the function (Medical Sector, Staging, Ventilation Sector, Salvage Sector, etc.).
7. Sector Commanders will use the sector designation in radio communications.
8. A sector commander will command sectors. Such commanders can be chief officers, company officers or any other fire department member designated by Command.



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9. In some cases, a sector commander will be assigned to an area/function initially to evaluate and report conditions and will advise Command of needed tasks and resources. A sector commander may also be designated during the course of on-going operations. He/she will receive an assignment and mission from Command along with assigned resources. He/she will then proceed to the sector, evaluate conditions, and assume sector command.
  
  10. In many cases, the initial sector assignment will be given to the company officer that receives the initial assignment to a basic tactical position (Sector A, Sector 5, Roof Sector, etc.). Command will indicate to such companies that they will be operating as both a sector commander and as an operating company. As soon as possible in such cases, Command will assign a Command Officer to relieve the company officer as sector commander or assign another officer to relieve the existing Sector Commander from operation (task) responsibilities so he/she can assume a more effective pure command role. Regular command transfer procedures will be followed in transferring sector command.

This early establishment of sectors provides an effective framework on which the operation can be built.

- A. Sector Commanders will be in command and control of all assigned functions within their sector. In accomplishing this, he/she will be responsible for the following:
  1. Monitor work progress
  2. Redirect activities as necessary.
  3. Coordinate with related activities.
  4. Monitor welfare of sector personnel.
  5. Request additional resources from Command as needed.
  6. Communicate with Command as necessary.
  7. Reallocate resources within his sector.
  
- B. A Sector Commander will keep Command informed of conditions in the assigned sector through regular progress reports. He/she will advise Command immediately of significant changes in conditions sector conditions, particularly those involving ability or inability to complete mission, hazardous conditions, accidents, collapse, etc. Command allocates overall resources to sectors and depends upon Sector Commanders to advise on the resource required within that sector.
  
- C. When a company is assigned from Staging to an operating sector, the company will be told what sector and which sector officer the assignment was made. The sector commander will be informed which particular companies or units have been assigned by Command. It is then the responsibility of the sector commander to contact the company by radio to transmit any instruction on the specific action requested.

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- D. Sector Commanders must be sufficiently mobile to be able to supervise the work of their assigned companies. This may mean actually going into interior operating positions to monitor progress while maintaining radio communications. The sector commander should be readily identifiable and maintain a visible position as much as possible (especially when additional companies are entering his command from staging); but this does not mean that he must stay away from operating positions.
- E. The primary function of the company officer working within a sector is to direct the operations of his crew in performing assigned tasks. Company officers will advise their sector commander of work progress and if a company officer determines he/she needs assistance on assigned work tasks, the company officer will request such assistance from the sector commander.
- F. Companies assigned to a sector will direct routine communications to their sector commander and should utilize non-radio modes whenever possible. This does not preclude the use of radio communications within sectors. Sector Commanders will conduct radio communications with Command and with other sector commanders. This procedure will only apply to routine communication- "EMERGENCY TRAFFIC" may be initiated by anyone at any time.
- G. Command can assign sectors to perform the following standard sector functions or may assign multiple sectors to the same function in complex situations:
- Fire fighting
  - Staging (Level II)
  - Water
  - Medical
  - Salvage and Overhaul
  - Evacuation
  - Safety/structural
  - Support
  - Hazardous materials
  - Utilities
  - Sewer and storm drain
  - Resource pool
  - Rehabilitation
  - Public Information
  - Police Liaison
  - Rapid Intervention Crew (RIC)
- In addition to these standard sector functions, Command can set up special sectors to perform any other special functions as required by the situation.

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**23.2 Branch Command Level**

Mid-Management level between OPERATIONS and Sectors. This level will be delegated and assigned when the number of Sectors exceeds the span of control of the Incident Commander.

When an operation expands to a level that the number of sectors assigned exceed Command's ability to supervise, then Command should designate a Branch Commander to directly supervise sectors officers. Operation sectors that are performing within the same operational realm should be grouped under a Branch Commander.

The normal Branch designations within Operations are Fire Suppression Branch, EMS Branch and Haz Mat Branch but are not limited to these normal designations. When a Branch Command level is established, sectors performing within a certain category of responsibility (Fire suppression, EMS, Haz Mat, etc.) will be grouped together and assigned to that branch commander. Understand that this level is implemented to reduce the span of control overload of Command/Operations. A single branch may be designed and single resources (engine company, ladder company, rescue company) or sectors not placed under the supervision of the Branch will remain under direct supervision of Command.

**23.3 Command Staff Function Level**

The command function of Operations, Planning, Logistics and Finance are delegated management levels between Command and Branches to reduce span-of-control overload of Command on complex incident scenes.

When an incident is so complex that major operations, planning or logistical problems must be addressed, Command may delegate any or all of the Command Staff Functions to subordinate command officers. In turn, Command can concentrate on the overall scope and not be overwhelmed by and tunnel-visioned to Operations. In complex situations, Planning becomes paramount to the success of an operation. Command will need to concentrate on coordination of the Staff functions and not be concentrated on the operation nuts and bolts.

Operations, Planning, Logistics and Finance Commanders are managers between Command and Branches identified within each their respective functions. These commanders are responsible for all activities and personnel performing duties within their respective function. Function Commanders should be located at the command post so direct communication with command can be assured.



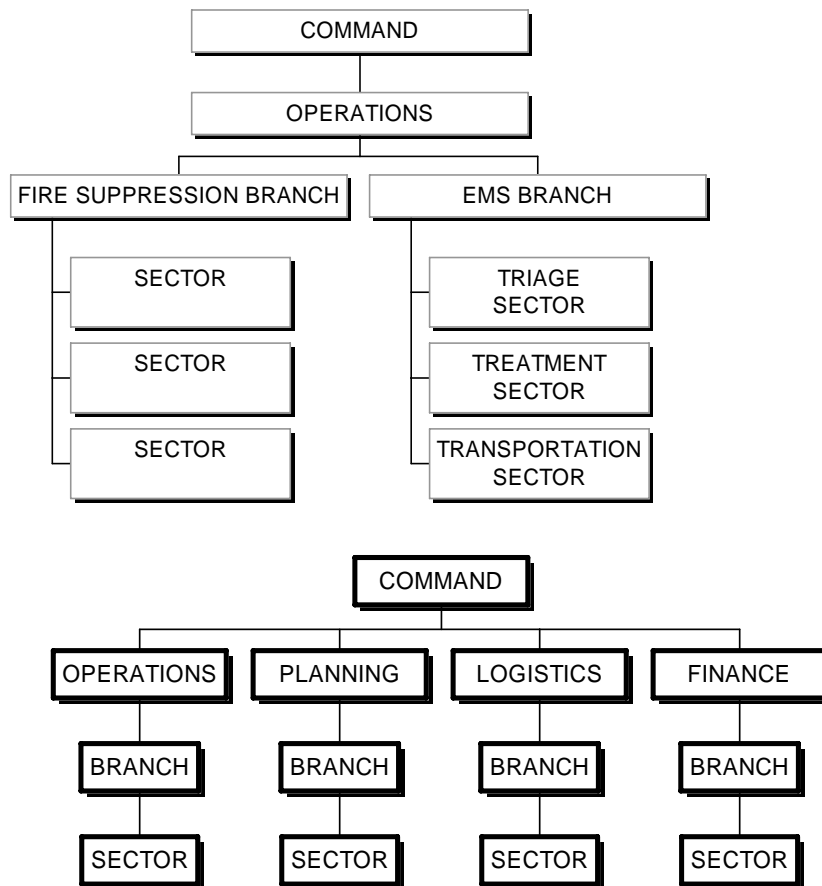
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Incident Command Structure Flow Chart Example:



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### Staging

The objective of the Staging procedure is to provide a standardized system for the initial placement of responding apparatus, men and equipment prior to tactical assignments by the Incident Commander.

Effective utilization of this procedure:

- \* Will provide means for the strategic placement of apparatus or assignment to critical tactical operations without time delays or potentially hazardous apparatus maneuvers due to dysfunctional apparatus placement.
- \* Will allow time for Command to evaluate conditions, formulate a plan and implement the plan without undue confusion and pressure.
- \* Produces more effective communications by virtue of reducing radio traffic during the critical initial stages of incident operations.

Staging will involve two levels:     LEVEL I and LEVEL 2

#### 23.1     Level 1 Staging

This procedure will automatically apply to all single and multiple unit responses to EMS alarms, vehicle fires and assist calls.

- A. The first engine company will respond directly to the scene and will operate to best advantage.
- B. The rescue unit will respond directly to the scene and place their apparatus in a location that will provide maximum access for medical/rescue support and not impede the movement of other units.

This procedure will automatically apply to all multiple unit responses to residential structures.

- A. The first engine company will respond directly to the scene and will operate to best advantage. This does not alter the fact that it is the first engine company officer's responsibility to provide for or possibly establish water supply.
- B. The rescue unit will go directly to the scene and place their apparatus in a location that will provide maximum access for medical/rescue support and not impede the movement of other units. Rescue personnel will report to the 1<sup>st</sup>-in Company Officer unless otherwise directed by Command.

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- C. The second engine company will stage at the primary hydrant for the building involved in the direction of travel required to lay a water supply (if not laid by the first engine company) to the incident scene. If not assigned water supply duties or other responsibilities while responding upon arrival at the staging location, the second engine company will report such arrival to Command (*Command, Engine 1 staged at the hydrant at \_\_\_\_\_Road.*). If the first engine company has laid a line and no assignment has been given to the second engine company by Command, the second engine company will proceed to the incident, report location to Command, and await assignment.
- D. The third arriving engine company, unless given an assignment by Command while in route, will proceed to the scene.. A position providing for maximum possible tactical options with regard to access, direction of travel, and exposure control should be selected.

This procedure will automatically apply to all multiple unit responses to **Commercial structures.**

The first arriving engine company will follow the procedure listed for the condition found upon arrival:

- A. Heavy smoke, fire showing or well involved upon arrival: The first engine company will establish the maximum possible supply from the primary hydrant and place his apparatus at the best tactical location to support rescue efforts, fire attack, etc.
- B. Nothing showing upon arrival: The first engine company will respond directly to the scene and operate to best advantage.

The second arriving engine will stage in accordance with the procedure for the conditions found:

- A. Heavy smoke, fire showing or well involved will stage at the secondary hydrant and await assignment by Command or when a building is sprinklered, establish a water supply to support the sprinkler system.
- B. Nothing showing will stage at the primary hydrant and await assignment by Command.
- C. The rescue unit will respond directly to the scene and locate at the most advantageous position to support medical/rescue efforts. Rescue personnel will report to the Engine Company Officer unless otherwise directed by Command.

Companies should continue response to the scene until a company reports on the scene. When a first arriving company reports on the scene, Level 1 staging will begin within these guidelines.

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If a company which would normally be first due to the incident is out of normal response area and arrival order is uncertain, the officer of that company will communicate his/her location to Fire Alarm. Company officers will utilize radio communications to coordinate possible simultaneous first arrival of two companies.

### **23.2 Level 2 Staging**

Level 2 Staging will relate to large, complex-type situations requiring an on-scene reserve of companies and will involve formal staging in an area designated by Command.

The Staging Area should be away from the Command Post and from the emergency scene in order to provide adequate space for assembly and for safe and effective apparatus movement. When going to "Level 2 Staging", Command will formally announce "Level 2 Staging", and will give the location of the Staging Area to Fire Alarm. Fire Alarm will in-turn notify all responding companies (the dispatchers of all responding mutual aid companies) to direct their units to the Staging Area. When Command announces a formal Staging Area, all responding companies will be directed to and remain in the Staging Area until assigned. Existing companies already staged in Level I will remain in Level I until assigned.

Command must designate a Staging Officer to assume command of the Staging Area. If the first unit into the Staging Area is a Vestavian unit, the Officer of that unit will notify Command of his arrival and will assume command of the Staging Area.

The radio designation for the Staging Officer, Area and function will be [STAGING]. All communications involving Staging will be between Staging and Command (or Staging and Operations level if established). All responding companies will stay off the air, respond directly to the designated Staging Area and report (in person) to the Staging Officer. They will stand by their units with crew intact and warning lights turned off.

When requested by Command, the Staging Officer will verbally assign companies to report to specific sectors, telling them where and to whom to report. He will then advise Command of the specific unit(s) assigned. The operating Sector Officer may then communicate directly with the company by radio.

Staging will give Command periodic reports of available companies in Staging. Staging may utilize another frequency (Tach Channel, Southern Linc, etc) and communicate with Fire Alarm for resources.

The Staging Officer will also be responsible for the following functions:

1. Coordinate with the Police Department to block streets, intersections and other access required for the Staging Area.
2. Insure that all apparatus are parked in an appropriate manner.
3. Maintain a log of companies available in the Staging Area and inventory all specialized equipment that might be required at the scene.

**VESTAVIA HILLS FIRE & RESCUE**

SUBJECT---INCIDENT MANAGEMENT SYSTEM  
TOPIC-----STAGING

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4. Review with Command what resources must be maintained in the Staging Area and coordinate the request for these resources with Fire Alarm.
5. To assume a position that is visible and accessible to incoming and staged companies. This will be accomplished by leaving the red lights operating on the unit that is designated Staging Command.

In some cases, the Staging Officer may have to indicate the best direction of response and routing for responding companies to get to the Staging Area.

A major medical emergency may require a separate Staging Area for ambulances. In such cases, the Staging Officer will so designate and relay this information to Fire Alarm and Command. Otherwise, ambulances responding to incidents where Level II Staging has been established will be dispatched to the Staging Area. The Medical Sector Officer will request and assign ambulances from Staging.

At some incidents it may be necessary to designate a parking area for abandoned apparatus near the incident scene. This would be necessary when the Staging Area is too far from the incident to facilitate hand carrying needed equipment to the incident site. In such cases, the Staging Officer shall designate a parking site and instruct each company of its location before they leave staging. The parking area should be close enough to the incident site to allow easy transfer of needed equipment to the scene. The parking area should in no way impede necessary access for ambulances or other units to the incident area.

Command may instruct Staging to maintain a minimum level of resources until further advised. In such circumstances, Staging will communicate with Fire Alarm to request additional units, manpower, equipment, etc. in order to maintain this minimum level.

## VESTAVIA HILLS FIRE & RESCUE

SUBJECT---INCIDENT MANAGEMENT SYSTEM  
 TOPIC-----SAFETY/EMERGENCY PROCEDURES

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### Safety/Emergency Procedures

The best safety procedure is to develop and practice on all Incidents an Incident Management System that will enhance accountability at all times for each firefighter with strong unity of command (each firefighter has only one supervisor to report to) and span of control (working in small manageable groups).

The individual officer must at all times know the location of all members of his/her crew.

The Sector Officer must at all times know the number of crews and the Company Officers assigned to him/her.

The IC must at all times know the Sector Officers assigned to an incident as well as provide for the safety, accountability and welfare of all personnel assigned to an incident.

#### **23.1 Personnel Accountability System** (See SOP, Section 13.4 & 13.5, Vestavia Rules & Regs.)

#### **23.2 Personnel Accountability Report P.A.R.**

At the 30-minute and each 30-minute advisory thereafter the IC will call for a P.A.R. from all units. Many times (routine 2 company incidents) the IC can conduct this quickly himself with face-to-face communications. If in place, Sector Officers should be ordered by the IC to P.A.R. their sectors.

P.A.R. defined: Each Company Officer will account for each member of his/her crew and report the results to the IC (or Sector Officer). A PAR is simply a physical head count of each crew conducted by their officer and then reported to Command.

Example: (*"Fire Alarm to Paden Command...you are 30 minutes into your incident. Conduct a PAR."*).

*"Paden Command to all units, conduct a PAR and report" Face to face if possible*

*"Engine one – PAR complete"*

**"Engine two – PAR complete", etc**

*"Paden Command received – PAR complete all units")*

In the event a PAR is incomplete, the IC will immediately order an operation to account for the missing crew or crew member.

Conducting a PAR every 30 minutes during a working incident will cause all company officers to keep a constant awareness of their crew. A PAR also causes the individual Firefighter to report his/her location and actions to their officer – thus dramatically increasing safety through improved accountability and elimination of free-lancing.

In the event Command breaks up a crew and reassigns its personnel, that company is no longer considered intact and the Company Officer will not be responsible for the PAR. The company, sector, etc. the personnel are assigned to is charged with the PAR accountability.

Example: *Engine 3's officer and driver are assigned to Engine 1 by Command, Engine 3's firefighter is assigned to Sector One by Command. Engine 1 and Sector One are now accountable for 3's personnel during PAR.*

## VESTAVIA HILLS FIRE & RESCUE

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The individual company officer must not reassign crewmembers beyond his/her scope. (i.e.: from an interior sector to exterior tasks). When an assigned task is completed – Command must be advised. Command will reassign uncommitted crews.

When additional resources are needed to complete a task, individual companies must not pull from another sector/crew – resources are requested from Command.

### Incomplete PAR/Missing firefighter or crew

Command will have Fire Alarm sound the emergency radio traffic tone.

Command will call on the radio a maximum of three times for the missing firefighter or crew.

If no response, the IC will immediately initiate operations to locate the unaccounted for personnel. See RIC.

### **23.3 Rapid Intervention Crew (RIC)**

During interior operations on structure fires, simple to complex, Command has the on-going responsibility to provide a system for fire fighter safety and survival. This system must include a contingency for rapid response to aid fire fighters down, lost in a building or otherwise compromised as to their safety.

At the absolute earliest possible time in an operation (time dependent upon manpower availability) Command will designate and establish a Staging Area directly adjacent to the Command Area.

A Rapid Intervention Crew of no less than two men that will man this staging area.( The IC, Safety Officer and/or, any/or all Apparatus Operators may serve in this role). The purpose of this team is to, upon directive by Command, respond to and render required assistance to an emergency call for help. The emergency response team will be in full protective clothing with self-contained breathing apparatus on their backs at all times while assigned as RIC. Any hand tools, lights, etc., necessary for the team to properly function on the emergency scene, will be gathered and maintained in the staging area.

## VESTAVIA HILLS FIRE & RESCUE

SUBJECT---INCIDENT MANAGEMENT SYSTEM  
 TOPIC----POST-INCIDENT CRITIQUE

SECTION 23  
 PAGE 1 of 1

### Post Incident Critique

Successful project management involves using a cyclic process including



A key element in the management of IMS is monitoring and evaluating. This will be accomplished informally incident by incident and formally with post incident critiques.

The Incident Commander in cooperation with the Shift Commander will schedule at the earliest possible opportunity a post incident critique after a major incident.

A major incident is defined as a multi-alarm fire; mass-casualty, Haz Mat, WMD or any other incident when the IC/Shift Commander feels a critique would be beneficial.



## Appendix F

## FREE Firefighter Training Programs

### UAB WORKPLACE SAFETY TRAINING

*Committed to advancing firefighter safety through training, materials development, and cooperation with institutions with similar goals*



### FREE TRAINING FOR FIRE FIGHTERS

Through a grant from the National Institute of Environmental Health Sciences, UAB offers these **new courses** at no charge:

- ◆ Confined Space Rescue
- ◆ Air Monitoring for Chemical Contaminants
- ◆ SCBA Fit Testing
- ◆ Incident Management Systems\*

We continue to provide at a discounted price:

- ◆ Hazardous Materials Technician\*
- ◆ Confined Space Entry/Basic Rescue
- ◆ Annual Refreshers\*



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\*Law enforcement invited to these courses

## Incident Management/Command Systems



*Two days of scenario based training using a realistic approach*

*All emergency incidents require a coordinated effort to ensure a safe, effective response.*

### Topics (as referenced by NFPA 1561, Incident Management Systems):

- ◆ Command, Planning, Operations, Logistics, and Finance sectors of IMS
- ◆ Implementing, executing, and terminating a planned response
- ◆ Communications
- ◆ Site safety
- ◆ Post-incident critique
- ◆ Tabletop decision-making exercises
- ◆ Unified command

**IMS improves response to any kind of emergency, and it must be used at all routine calls on a daily basis. Invite law enforcement and EMS to train with you for more efficient joint response.**

## Appendix G

### Incident Commander Equipment List

The following list includes vendors of products related to incident management. This list is not an endorsement. It is included for convenience only.

J. J. Keller & Associates, Inc.  
3003 W. Breezewood Lane  
Post Office Box 368  
Neenah, Wisconsin 54957  
800-327-6868  
*Emergency Response Guidebook*

United States Fire Administration  
[www.fima.gov](http://www.fima.gov)  
*Emergency Response to Terrorism*

National Interagency Fire Center  
3833 S. Development Avenue  
Boise, Idaho 83705  
*Fireline Handbook NFES #0065*

FireScope  
*Field Operation Guide ICS 420-1*

Conterra Technical Systems, Inc.  
3828 Idaho Street  
Bellingham, WA 98226  
360-734-2311  
*Technical Rescue Guide*

Tricorn Environmental, Inc.  
1937 Whatley Road  
Auburn, Alabama 35604  
800-854-4312  
[www.tricon-env.com](http://www.tricon-env.com)  
*Barrier tape, response paks*

Advance Marking Systems (Barry Larson)  
1912 Minor Avenue  
Seattle, WA 98101  
206-728-8888  
*Passport and bar code tracking systems, status boards*

Canyon State Emergency Products  
2420 S. 16<sup>th</sup> Avenue  
Peoria, Arizona 85007  
602-979-0434

*PASS devices, command vests, radios, turnouts, hoses, command apparatus, and several other products*

Clemens Industries, Inc.  
P. O. Box 277  
Ashton, MD 20861  
301-744-0295

*Command boards and worksheets, vest systems, accountability systems*

Fagel EMS Specialties  
68 Canterbury Road  
Aurora, IL 60506  
708-897-9068

*Incident command vests, tactical worksheets, command post markers*